

A more in-depth evaluation of wildlife is provided by U.S. Fish and Wildlife in Appendix C and should be referenced more prominently in this chapter.

Draft Recommended Change:

Include additional information describing current (baseline) conditions and reference Appendix C more prominently.

Report Section Identification:Chapter 2.

Report Page Number: 2-1

Draft Comment:

In the context of risk assessment terminology, characterization of current condition is typically referred to as background or baseline conditions.

Draft Recommended Change: Change in chapter title

Report Section Identification: 2.1

Report Page Number: Page 2-2

Comment: This page shows that the Togiak, Naknek, Egegik and Ugashik watersheds are completely isolated from any of the mine drainages and could not be affected by the mine in any way yet nowhere in the text is this mentioned, especially when discussing the value of the fisheries, Native cultures, and direct impact to neighboring villages.

Recommended Change: The text in the executive Summary and in Chapter 2 should point out that these watersheds could not be affected by the mine and that they represent approximately xx% of the population of the Bristol Bay region and xx% of the economy.

Report Section Identification: 2.1 to 2.2.1

Report Page Number: 2-2, 2-4, 2-5 and 2-12

Comment: The Figures on these pages exaggerate the area of the Pebble Deposit. The legend states that the area in red is the approximate area of the Pebble Deposit. A more accurate way to present this is the "Likely Maximum Disturbed Area of the Pebble Mine". Using Figure 2-2 as an example of all of these figures. It could be argued that this scale is too small to accurately show the area, but perception of these figures is easily swayed and it is important as people form their opinions of the impacts. The maximum mine disturbance from the map of Page ES-17 is approximately 30.8 square miles, while the map of Figure 2-2 shows 116.4 square miles, based on the scale of the map.

Recommended Change: The figures above should be revised to show Likely Maximum Disturbed Area of the Pebble Mine, reflecting the smaller area. The actual area should be shown on each figure.

Report Section Identification: 2.1 Introduction to the Bristol Bay Region

Report Page Number: 2-3

Comment: The document states that "the great majority obtain most of their food resources from subsistence, fishing, hunting, and gathering". There are several studies that show this is not the

case. One report published by the International Journal of Circumpolar Health Titled: The Dietary Intake of Alaska Native People, concluded 21 % of calories, 46 % of protein, and 3 % of carbohydrates came from traditional Alaska Native foods. This study was limited to only two regions of rural Alaska but there are other studies that could be referenced that came to similar conclusions.

Recommended Change: The document should include scientific peer reviewed facts for this statement.

Report Section Identification: Sections 2.2 and 6.6

Report Page Number: All pages within the identified sections

Comment: Sections 2.2 and 6.6 discuss Alaska Native Cultures and the Effects on Human Welfare and Alaska Native Cultures. According to the report “because the cultures are subsistence-based and reliant on salmon in particular, any negative impact on salmon quality and/or quantity resulting from failures or accidents should be assumed to cause a negative impact on human health and welfare, both directly from loss or change in food resources, and indirectly from disruption to an integral part of the culture.” The report goes on to discuss how subsistence is important for Alaska Natives, especially salmon. According to the Alaska Department of Fish and Game Division of Subsistence update of subsistence economies in Alaska 2010, which is available to the public on the Department’s website, just over half of the harvest of wild foods in Bristol Bay is salmon. This important resource is used by the region’s diverse population (Alaska Natives and others). Although communities in Bristol Bay are dominantly Alaska Native, these communities do have a more complex demographic and all residents rely on wild resources, especially salmon. According to the U.S. Census in Dillingham, the region’s largest community, 68% of the population is Alaska Native.

Recommended Change: This report should take into account how subsistence, especially salmon is important for all residents of the region. Many non-Alaska Native peoples in Bristol Bay have lived in the area for multiple generations.

Report Section Identification: Sections 2.2 and 6.6; Appendix D

Report Page Number: All pages within the identified sections

Comment: The watershed assessment report further says that “It is not possible to quantify the magnitude of subsistence resources that would be lost.” The ADF&G, Division of Subsistence has conducted extensive research in the Bristol Bay Watershed, and has conducted research specifically at quantifying the harvest of wild resources. Appendix D of this report does reference some of these reports including the Alaska Subsistence Salmon Fisheries 2005 Annual report (Fall, Caylor et al. 2007), An Overview of Subsistence Fisheries in the Bristol Bay Management Area (Fall, Krieg et al. 2009), the Kvichak Watershed Subsistence Salmon Fishery: An Ethnographic Study (Fall, Holen et al. 2010), and 2 of the 5 baseline studies that were conducted specifically for the Pebble Project (Fall, Holen et al. 2006; Krieg, Holen et al. 2009). Although the data from these studies were used in compiling Appendix D, staff at the Division of Subsistence were not consulted for this assessment; it appears as a result that the authors failed to consult several important recent publications including both technical papers and articles that are also necessary for understanding the complexity of subsistence and the intersection of subsistence and culture in the Bristol Bay region (Holen, Krieg et al. 2005; Krieg, Chythlook et al. 2005; Fall, Brown et al. 2009; Fall, Brown

et al. 2009; Holen 2009; Holen 2009; Holen and Lemons 2010; Fall, Brown et al. 2011; Holen 2011; Holen 2011; Fall, Braem et al. 2012; Holen 2012). Consultation with Division of Subsistence staff would also have alerted the authors to a key source of local and traditional knowledge (LTK) about salmon in the Bristol Bay Area: From Neqa to Tapa, Luq'a to Chuqilin: A Database with Traditional Knowledge about the Fish of Bristol Bay and the Northern Alaska Peninsula, which is available on CD from the division.

Recommended Change: Authors of these sections of the watershed assessment should consult with the ADF&G, Division of Subsistence to ensure an accurate and complete depiction of the complexity of subsistence and the intersection of subsistence and culture in the Bristol Bay region.

Draft Comment Reference: Fall, J. A., N. Braem, et al. (2012). Alaska subsistence salmon fisheries 2009 annual report. Technical Paper No. 373. Anchorage, Alaska Department of Fish and Game, Division of Subsistence.

Fall, J. A., C. Brown, et al. (2011). Alaska subsistence salmon fisheries 2008 annual report. Technical Paper No. 359. Anchorage, Alaska Department of Fish and Game, Division of Subsistence.

Fall, J. A., C. Brown, et al. (2009). Alaska subsistence salmon fisheries 2006 annual report. Anchorage, Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 344.

Fall, J. A., C. Brown, et al. (2009). Alaska subsistence salmon fisheries 2007 annual report. Anchorage, Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 346.

Fall, J. A., D. Caylor, et al. (2007). Alaska subsistence salmon fisheries 2005 annual report. Juneau., Alaska Department of Fish and Game, Division of Subsistence Technical Data Report No. 318.

Fall, J. A., D. Holen, et al. (2010). The Kvichak watershed subsistence salmon fishery: An ethnographic study. Technical Paper No. 352. . Anchorage, Division of Subsistence, Alaska Department of Fish and Game.

Fall, J. A., D. L. Holen, et al. (2006). Subsistence harvests and uses of wild resources in Iliamna, Newhalen, Nondalton, Pedro Bay, and Port Alsworth, Alaska, 2004. Juneau., Alaska Department of Fish and Game, Division of Subsistence Technical Data Report No. 302.

Fall, J. A., T. Krieg, et al. (2009). An overview of subsistence fisheries of the Bristol Bay management area. Anchorage, Alaska Department of Fish and Game.

Holen, D. (2009). "The dynamic context of cultural and social sustainability of communities in Southwest Alaska." *Journal of Enterprising Communities* 3(3): 306-316.

Holen, D. (2009). "A resilient subsistence salmon fishery in Southwest Alaska." *Journal of Northern Studies* 2: 99-113.

Holen, D. (2011). "We all drink this water:" The contemporary context of salmon fishing in Southwest Alaska. Humanizing security in the Arctic. D. Michelle, F. Levesque and J. Ferguson. Edmonton, Canadian Circumpolar Institute: 191-208.

Holen, D. and T. Lemons (2010). Subsistence harvests and uses of wild resources in Lime Village, Alaska, 2007. Division of Subsistence Technical Paper No. 355. Anchorage, Division of Subsistence, Alaska Department of Fish and Game.

Holen, D., Theodore Krieg, Jory Stariwat, and Terri Lemons (2012). Subsistence harvests and uses of wild resources in Aleknagik, Clark's Point, and Manokotak, Alaska, 2008. Technical Paper No. 368. Anchorage, Division of Subsistence, Alaska Department of Fish and Game.

Holen, D., Theodore Krieg, Terri Lemons (2011). Subsistence harvests and uses of wild resources in King Salmon, Naknek, and South Naknek, Alaska, 2007. Technical Paper No. 360. Anchorage, Division of Subsistence, Alaska Department of Fish and Game.

Holen, D. L., T. Krieg, et al. (2005). Harvests and uses of caribou, moose, bears, and Dall sheep by communities of Game Management Units 9B and 17, Western Bristol Bay, Alaska 2001-2002. Juneau., Alaska Department of Fish and Game, Division of Subsistence Technical Data Report No. 283.

Krieg, T., M. Chythlook, et al. (2005). Freshwater fish harvest and use in communities of the Kvichak watershed, 2003. Juneau., Alaska Department of Fish and Game, Division of Subsistence Technical Data Report No. 297.

Krieg, T., D. Holen, et al. (2009). Subsistence harvests and uses of wild resources in Igiugig, Kokhanok, Koliganek, Levelock, and New Stuyahok, Alaska, 2005. Dillingham, Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 322.

Report Section Identification: Table 2-2
Report Page Number: 2-7
Comment: The table title "...as a Percentage of Entire Watershed Area" is misleading, as the rows (which sum to 100 percent) are for sub-areas of the two watersheds (Nushagak and Kvichak).
Recommended Change: Recommend revising the table title.

Report Section Identification: 2.2
Report Page Number: 2-8
Comment: The Figure shows pictures of various rivers and lakes in the Bristol Bay region, many of which would not be affected by the mine in any way according to the maps provided throughout the Bristol Bay Watershed Assessment however, the actual stream sections that would be blocked or eliminated are not included.
Recommended Change: The figure above should be revised (or a new figure added) to show the actual stream sections that would be blocked or eliminated by the mine.